

**IN THE TITLE**

Please amend the title of the invention as follows:

**~~Medical Procedure Using Multiple Lumen Catheter System~~  
~~having Removability Feature~~**

**IN THE CLAIMS**

Please cancel claims 1-16.

Please add new claims 17-65 as set forth below.

A complete listing of all claims in this application is set forth below.

---

Claims 1-16 (canceled).

A<sup>1</sup>

17. (new) A catheter system, comprising:

a guide catheter assembly having (i) a proximal fluid lumen orifice, (ii) a distal fluid lumen orifice, and (iii) a first fluid lumen extending therebetween, said guide catheter assembly further having a first opening and a second opening, and both said first opening and said second opening being spaced apart from said distal fluid lumen orifice; and

a second catheter defining a second fluid lumen, said second catheter (i) being at least partially positioned within said guide catheter assembly, and (ii) extending through both said first opening and said second opening.

18. (new) The catheter system of claim 17, wherein said second catheter is configured to be removable from said guide catheter assembly.

19. (new) The catheter system of claim 17, wherein said second catheter extends between said first opening and said second opening.

20. (new) The catheter system of claim 17, wherein:

a proximal segment of said second catheter is positioned (i) outside of said guide catheter assembly, and (ii) proximal to said second opening, and

a distal segment of said second catheter is positioned (i) outside of guide catheter assembly, and (ii) distal to said first opening.

21. (new) The catheter system of claim 17, further comprising a tissue ingrowth member secured to an outside surface of said guide catheter assembly, wherein:

said tissue ingrowth member is spaced apart from second catheter.

22. (new) The catheter system of claim 21, wherein:

said tissue ingrowth member defines a central passage, and

said second catheter extends through said central passage.

23. (new) The catheter system of claim 17, wherein:

a passage extends between said first opening and said second opening,

and

said second catheter is located within said passage.


24. (new) The catheter system of claim 23, wherein said passage is isolated from fluid communication with said first fluid lumen.

25. (new) The catheter system of claim 24, wherein said second fluid lumen is located within said passage.

26. (new) The catheter system of claim 17, wherein:  
said guide catheter assembly includes a first locking component,  
said second catheter includes a second locking component, and  
said first locking component and said second locking component are  
configured to cooperate with each other so as to lock said second catheter to  
said guide catheter assembly.

27. (new) The catheter system of claim 26, wherein said first locking  
component includes a set of threads.

28. (new) The catheter system of claim 27, wherein said second locking  
component includes an internally threaded cap that mates with said set of  
threads of said guide catheter assembly.

 29. (new) The catheter system of claim 17, further comprising a valve  
positioned (i) within said guide catheter assembly, and (ii) in contact with said  
second catheter.

30. (new) The catheter system of claim 17, wherein:  
said guide catheter assembly includes a first coupling configured to  
connect to a first fluid line of a dialysis machine, and  
said second catheter includes a second coupling configured to connect to  
a second fluid line of said dialysis machine.

31. (new) The catheter system of claim 17, wherein:

said second catheter assembly has (i) a proximal fluid lumen port, (ii) a distal fluid lumen port, and (iii) said second fluid lumen extends therebetween, and

said distal fluid lumen orifice of said guide catheter assembly is located distal to said distal fluid lumen port of said second catheter.

32. (new) The catheter system of claim 17, wherein:

said second catheter assembly has (i) a proximal fluid lumen port, (ii) a distal fluid lumen port, and (iii) said second fluid lumen extends therebetween, and

said distal fluid lumen orifice of said guide catheter assembly is located proximal to said distal fluid lumen port of said second catheter.

R!  
Cont

33. (new) A catheter system, comprising:

a guide catheter assembly having (i) a proximal fluid lumen orifice, (ii) a distal fluid lumen orifice, and (iii) a first fluid lumen extending therebetween, said guide catheter assembly further having a first opening and a second opening, and both said first opening and said second opening being spaced apart from said distal fluid lumen orifice; and

a second catheter defining a second fluid lumen and having a distal segment,

wherein at least a portion of said second catheter is removably positioned within said guide catheter assembly,

wherein said second catheter extends through said first opening, and

wherein said distal segment of said second catheter is positioned outside of said guide catheter assembly and distal to said first opening.

*A1*  
*Cond*  
34. (new) The catheter system of claim 33, wherein said portion of said second catheter extends between said first opening and said second opening.

35. (new) The catheter system of claim 33, wherein:

said second catheter further has a proximal segment, and

said proximal segment of said second catheter is positioned outside of said guide catheter assembly and proximal to said second opening.

36. (new) The catheter system of claim 33, further comprising a tissue ingrowth member secured to an outside surface of said guide catheter assembly, wherein:

said tissue ingrowth member is spaced apart from second catheter.

37. (new) The catheter system of claim 36, wherein:

said tissue ingrowth member defines a central passage, and  
said second catheter extends through said central passage.

38. (new) The catheter system of claim 34, wherein:

a passage extends between said first opening and said second opening,  
and

said second catheter is located within said passage.

*Al*  
*Cont*  
39. (new) The catheter system of claim 38, wherein said passage is  
isolated from fluid communication with said first fluid lumen.

40. (new) The catheter system of claim 39, wherein said second fluid  
lumen is located within said passage.

41. (new) The catheter system of claim 33, wherein:  
said guide catheter assembly includes a first locking component,  
said second catheter includes a second locking component, and  
said first locking component and said second locking component are  
configured to cooperate with each other so as to lock said second catheter to  
said guide catheter assembly.

42. (new) The catheter system of claim 41, wherein said first locking  
component includes a set of threads.

43. (new) The catheter system of claim 42, wherein said second locking  
component includes an internally threaded cap that mates with said set of  
threads of said guide catheter assembly.

44. (new) The catheter system of claim 33, further comprising a valve  
positioned (i) within said guide catheter assembly, and (ii) in contact with said  
second catheter.

45. (new) The catheter system of claim 33, wherein:  
said guide catheter assembly includes a first coupling configured to  
connect to a first fluid line of a dialysis machine, and  
said second catheter includes a second coupling configured to connect to  
a second fluid line of said dialysis machine.



46. (new) The catheter system of claim 33, wherein:

said second catheter assembly has (i) a proximal fluid lumen port, (ii) a distal fluid lumen port, and (iii) said second fluid lumen extends therebetween, and

said distal fluid lumen orifice of said guide catheter assembly is located distal to said distal fluid lumen port of said second catheter.

47. (new) The catheter system of claim 33, wherein:

said second catheter assembly has (i) a proximal fluid lumen port, (ii) a distal fluid lumen port, and (iii) said second fluid lumen extends therebetween, and

said distal fluid lumen orifice of said guide catheter assembly is located proximal to said distal fluid lumen port of said second catheter.

48. (new) A catheter system, comprising:

a guide catheter assembly having (i) a proximal fluid lumen orifice, (ii) a distal fluid lumen orifice, (iii) an internal passage, (iv) a first opening, and (v) a second opening, wherein both said first opening and said second opening are spaced apart from said distal fluid lumen orifice; and

a second catheter extending through said first opening, said second catheter (i) defining a first fluid lumen, and (ii) having a first segment and a second segment,

wherein said first segment is located within said internal passage, and

wherein said second segment is positioned outside of said guide catheter assembly and distal to said first opening.

49. (new) The catheter system of claim 48, wherein said guide catheter assembly defines a second fluid lumen that extends between said proximal fluid lumen orifice and said distal fluid lumen orifice.

*A1*  
*Cont* 50. The catheter system of claim 49, wherein said second fluid lumen is spaced apart from said internal passage.

51. (new) The catheter system of claim 48, wherein said first segment of said second catheter is removably positioned within said internal passage of said guide catheter assembly.

52. (new) The catheter system of claim 48, wherein said first segment of said second catheter extends between said first opening and said second opening.

53. (new) The catheter system of claim 52, wherein:  
said second catheter further has a third segment, and  
said third segment of said second catheter is positioned outside of said guide catheter assembly and proximal to said second opening.

54. (new) The catheter system of claim 48, further comprising a tissue ingrowth member secured to an outside surface of said guide catheter assembly, wherein:

said tissue ingrowth member is spaced apart from second catheter.

55. (new) The catheter system of claim 54, wherein:  
said tissue ingrowth member defines a central passage, and  
said second catheter extends through said central passage.

56. (new) The catheter system of claim 52, wherein said internal passage extends between said first opening and said second opening.

A1  
Cont

57. (new) The catheter system of claim 56, wherein:  
said guide catheter assembly defines a second fluid lumen that extends  
between said proximal fluid lumen orifice and said distal fluid lumen orifice, and  
said internal passage is isolated from fluid communication with said  
second fluid lumen.

58. (new) The catheter system of claim 57, wherein said first fluid lumen  
is located within said internal passage.

59. (new) The catheter system of claim 48, wherein:  
said guide catheter assembly includes a first locking component,  
said second catheter includes a second locking component, and  
said first locking component and said second locking component are  
configured to cooperate with each other so as to lock said second catheter to  
said guide catheter assembly.

60. (new) The catheter system of claim 59, wherein said first locking  
component includes a set of threads.

61. (new) The catheter system of claim 60, wherein said second locking  
component includes an internally threaded cap that mates with said set of  
threads of said guide catheter assembly.

62. (new) The catheter system of claim 48, further comprising a valve positioned (i) within said guide catheter assembly, and (ii) in contact with said second catheter.

63. (new) The catheter system of claim 48, wherein:  
said guide catheter assembly includes a first coupling configured to connect to a first fluid line of a dialysis machine, and  
said second catheter includes a second coupling configured to connect to a second fluid line of said dialysis machine.

64. (new) The catheter system of claim 48, wherein:  
said second catheter assembly has (i) a proximal fluid lumen port, (ii) a distal fluid lumen port, and (iii) said first fluid lumen extends therebetween, and  
said distal fluid lumen orifice of said guide catheter assembly is located distal to said distal fluid lumen port of said second catheter.

*A'*  
*Concl*  
65. (new) The catheter system of claim 48, wherein:  
said second catheter assembly has (i) a proximal fluid lumen port, (ii) a distal fluid lumen port, and (iii) said first fluid lumen extends therebetween, and  
said distal fluid lumen orifice of said guide catheter assembly is located proximal to said distal fluid lumen port of said second catheter.

---